



### Highest confidence under low clouds with maximum data availability and minimum maintenance

- **Parameters measured**

Aerosol backscatter profile, cloud base height, cloud penetration depth, aerosol layer height, cloud cover, vertical visibility, Sky Condition Index

- **Measurement technology**

Optical (LIDAR)

- **Product highlights**

Measuring range of up to 8 km (26.246 ft), simple & eye-safe, service-friendly due to modularity, various data telegrams, sensitivity in the range of the Lufft CHM 15k, suitable for the most demanding environments

- **Interfaces**

RS485 (ASCII communication), LAN (Web-Interface, (S-)FTP, NetTools); optional: DSL modem, RS485 full-duplex

- **Article number**

8349.01-010

The new Lufft CHM 8k ceilometer empowers meteorologists at weather services and airports to make the right decisions with highest confidence and minimal maintenance. Especially in the critical height below 1 km, the Lufft CHM 8k detects cloud bases in any place and season with outstanding precision and reliability. Internal data storage and a battery backup enable unmatched sensor uptime and data availability even at the harshest conditions.

# Technical Data

## Lufft Ceilometer CHM 8k



Using the Lidar technology, it detects backscatter aerosol profiles / structure in multiple layers, cloud bases, cloud penetration depths as well as vertical visibility and issues the sky condition index. It has an operating range of up to 8,000m (26,200 ft) and is equipped with an integrated controller offering a fully embedded real-time calculation of all target parameters and comfortable user interfaces.

| Measuring principle | Lidar (light detection and ranging) |
|---------------------|-------------------------------------|
|---------------------|-------------------------------------|

| Measuring parameters                              |   |
|---|---|
| Aerosol backscatter profile                       |   |
| Measuring range                                   | 0 m ... 10 km (0 ... 32,808 ft)   |
| Time resolution                                   | 2 ... 600 s   |
| Range resolution                                  | 5 m   |
| Reported Range resolution                         | 5 - 30 m in 5 m steps   |
| Cloud base heights, Cloud penetration depths      | 1 - 9 layer (configurable);<br>3 layer preset   |
| Cloud detection range                             | 5 m ... 8 km (16 ... 26,246 ft)   |
| Distance measurement accuracy against hard target | 'Greater of $\pm 5$ m ( $\pm 16$ ft) or $\pm 0.2\%$   |
| Additional measuring quantities                   | Cloud cover in octas (WMO 2700), Vertical visibility, Aerosol layer heights (mixing layer, boundary layer), sky condition index |
| Quality and auxiliary values                      | External and internal temperature; window, laser and receiver status, input voltage control, humidity                           |

| Communication       |   |
|---------------------|---|
| Standard interfaces | RS485 half-dublex (ASCII communication), LAN (Web-Interface, (S-)FTP, NetTools) |
| Optional interfaces | DSL modem, full duplex  |

| Electrical parameters    |  |
|--------------------------|--|
| Power supply             | 230 VAC or 115 VAC, $\pm 10\%$   |
| Mains frequency          | 50, 60 hz  |
| Power consumption        | 250 W (w/o housing heater)<br>450 W (with housing heater)                          |
| UPS functionality (opt.) | Internal backup battery for electronics (1 hour covering all operating conditions) |

| Laser-optical parameters   |                                   |
|----------------------------|-----------------------------------|
| Light source               | Laser diode                       |
| Wavelength                 | 905 nm                            |
| Pulse energy               | 2 $\mu$ J max. (1,6 $\mu$ J typ.) |
| Pulse repetition frequency | 8 kHz                             |
| Filter Bandwidth           | 25 nm                             |
| Field of view receiver     | 1.1 mrad                          |

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## Lufft Ceilometer CHM 8k



| Operating Safety         |   |
|--------------------------|---|
| General Safety           | IEC 61010-1 (TUEV Rheinland certified)<br>UL 61010-1 (TUEV SÜD certified)<br>AS 61010.1 (Australien und Neuseeland)<br>CAN/CSA-C22.2 No. 61010-1 (TUEV SÜD certified) |
| Laser protection class   | 1M, IEC 60825-1:2014; complies with CFR 1040.10   |
| Protection level housing | IEC 60529: IP66   |
| EMC                      | EN 61326 - 1 Klasse B<br>FCC: 47 CFR Part 15, Class B   |
| Certifications           | CE (230 VAC); 115 VAC version compatible with FCC/ CSA  |
| International standards  | Complies with ICAO fragility requirements   |

| Operating Conditions |                |
|----------------------|----------------|
| Operating Conditions | ISO 10109 - 11 |
| Temperature range    | -40...+60 °C   |
| Relative humidity    | 0...100 %      |
| Wind load            | 60 m/s         |

| Physical   |                                |
|------------|--------------------------------|
| Dimensions | 500 x 500 x 1550 mm            |
| Weight     | 70 kg (130 kg incl. Packaging) |